

## **NHDES Exotic Aquatic Species Program Chronology of Events: 1981-1998**

### **1981**

- The exotic aquatic weed control legislation (RSA 487-17 formally RSA 149-F:3) became law on August 22, 1981.
- Fifty thousand brochures describing the exotic aquatic weed control program were distributed to boat license agents, state rest areas, marinas and lake associations.
- Waterproof posters depicting how to stop the spread of exotic weeds to other waterbodies were designed and distributed by DES personnel. Posters were placed at high use boat launching facilities throughout the state.
- A television commercial describing the exotic weed control program aired on Channel 9, in Manchester.
- Articles on exotic weed control were placed in several of the states most read newspapers.
- Personnel from this department discussed the exotic weed control problem at many lake association meetings.
- Several exotic weed complaints were field investigated by DES personnel.

### **1982**

- The Citizen Aquatic Weed Control Advisory Committee was formed.
- Educational material was distributed throughout the state to keep the public up to date on milfoil control. Boat license agents, state rest areas, boat marinas and lake associations received this material.
- Matching funds were awarded to Smith Cove Lake Association for mechanical harvesting of milfoil in Lake Winnepesaukee.
- Fifty lakes were surveyed for the presence of exotic weeds.
- A new infestation of milfoil was discovered in the outlet of Lake Waukegan by DES personnel. It was successfully eradicated with an aquatic herbicide.

### **1983**

- The Smith Cove Lake Association in Gilford and the Wolfeboro Conservation Commission were awarded matching fund grants for the harvesting of milfoil in Lake Winnepesaukee.
- Educational material was distributed throughout the state.
- Fifty lakes were surveyed for exotic weed life by DES personnel.
- Several complaints or inquiries pertaining to exotic weeds were either field investigated or handled through correspondence.
- DES personnel presented several talks on weed control at lake association meetings during the summer.
- Correspondence to other states and countries experiencing exotic aquatic weed problems was initiated in order to obtain new or existing aquatic weed control techniques.

## 1984

- The Towns of Alton, Gilford, Meredith and Wolfeboro were awarded matching grants to mechanically harvest exotic milfoil in Lake Winnepesaukee.
- The West Alton Marina was awarded a matching grant to apply aquatic herbicide to their dock area to control milfoil.
- Educational material was distributed throughout the state.
- Fifty exotic weed surveys were performed throughout the state.
- A new infestation of milfoil was hand pulled at the boat launching facilities on Crescent Lake in Wolfeboro. SCUBA equipment was utilized during the operation.
- Several aquatic weed complaints were field investigated by DES personnel.
- Personnel from DES monitored a lake drawdown and dredging project that was undertaken to control exotic fanwort in Millville Lake in Salem.
- Several newspaper articles were published state wide pertaining to exotic aquatic weed control. The Boston Sunday Globe did an extensive feature story on exotic milfoil in Lake Winnepesaukee. "The Laker" in Wolfeboro printed an excellent article explaining the problem.
- DES personnel addressed the exotic plant control problems at lake association meetings during the summer.

## 1985

- Funding for exotic weed control was suspended due to a previously unknown legislative footnote. No weed control projects were funded this year.
- Fifty exotic weed surveys were performed on lakes throughout the state.
- Millville Lake was inspected for Cabomba growth following a dredging operation.
- Educational material was distributed throughout the state.
- DES SCUBA team removed a small patch of milfoil from Crescent Lake boat landing area in Wolfeboro.
- DES personnel addressed aquatic weed problems at lake association meetings.

## 1986

- Aquatic weed control program funds became available due to legislative action. However, no projects were funded that summer due to funds not being available in time.
- Fifty exotic weed surveys were undertaken during the summer months.
- Two papers entitled "A Review of Current and Experimental Methods for the Control and Management of Aquatic Milfoil" and "Answers to Questions Concerning Aquatic Milfoil in New Hampshire Surface Waters" were written for distribution to the public.
- Educational material was distributed to lake associations, boat marinas, and the general public.

- Millville and Crescent Lakes were intensely surveyed for exotic weeds.
- Personnel from DES addressed aquatic weed problems at lake association meetings during the summer months.

## 1987

- Matching funds were awarded to the Town of Alton to undertake a milfoil dredging project in Lake Winnepesaukee.
- SCUBA divers removed small milfoil infestations at the Crescent Lake boat landing in Wolfeboro and in a section of the Winnepesaukee River in downtown Laconia.
- Two mechanical harvesting projects were planned for the summer. However, town officials could not obtain the necessary local funding to match the state's share.
- An attempt to dredge 10,000 square feet of milfoil and bottom substrate was canceled in Opechee Lake in Laconia. Heavy duty equipment became mired down in the deep muds near the milfoil infestation.
- Educational material was distributed throughout the state.
- Intensive exotic weed surveys were undertaken in seventeen lakes and ponds near Lake Winnepesaukee. These ponds were considered to be vulnerable to a milfoil infestation.
- Fifty exotic weed searches were performed on other state lakes.
- A grant of \$45,000 was awarded to the University of New Hampshire in Durham for Research on how to control exotic weed growth. Research was conducted in Back Bay in Wolfeboro on Lake Winnepesaukee.
- Private citizens participating in the New Hampshire State Assisted Lay Monitoring Program were instructed to report the sighting of any new weed growths in their respective lakes and ponds. The manual used by these lay monitors has a special section on exotic weed life.
- Millville Lake in Salem was checked for any regrowth of fanwort after a dredging operation. There has been no sign of fanwort in the lake to this date.
- A news release concerning exotic weeds and their potential spread to other lakes was distributed throughout the state media system.
- DES personnel participated in a workshop entitled "Nuisance Aquatic Weeds in New England". This workshop was sponsored by the New England Association of Environmental Biologists.
- A 4" x 6" educational handout card depicting how exotic weeds can be spread to other lakes through boating activity was distributed to boat owners during registration of their respective boats.

## 1988

- The state initiated a "Weed Watcher Program" for lake residents. Volunteer weed watchers were given instruction kits which taught them how to look for exotic weeds in their respective lakes. Any weeds that were suspected to be milfoil or fanwort were submitted to the DES Biology Bureau for verification. The program was well received

by the public.

- Fifty exotic weed surveys were performed during the summer as well as many field investigations of exotic weed complaints.
- Matching funds were awarded to the Smith Cove Lake Association for the harvesting of exotic milfoil in Lake Winnepesaukee.
- Benthic barriers were installed in Lake Opechee to control a small area infested with milfoil.
- DES personnel assisted on a private dredging project to control milfoil in Lake Opechee.
- Hand pulling of small infestations of milfoil were undertaken in Flints Pond, Crescent Lake, Lake Opechee and the Winnepesaukee River.
- A boat inspection program to detect "stowaway" exotic plant fragments was initiated during the summer of 1988. Participating towns were given \$2.00 per boat inspection. A questionnaire was also filled out by each person going through the inspection. Educational material was handed out to all boaters using these inspection launch sites. Towns participating were Meredith, Alton, Center Harbor (Winnepesaukee) and Sunapee (Lake Sunapee).
- Exotic milfoil was found in Turkey Pond, Concord and Flints Pond in Hollis during routine exotic weed surveys.
- Several boat docking facilities and launch sites were checked for the presence of exotic weeds during the summer.

## 1989

- A matching grant was awarded to the Locke Lake Association in Barnstead for the purpose of chemically treating 40 acres of exotic milfoil. The chemical called Diquat was used to control the milfoil.
- Lake shore residents along the northwestern section of Opechee Lake were awarded a matching grant to dredge milfoil and the bottom muds that sustain the exotic weeds. This was undertaken during a fall drawdown of the lake.
- St. Paul's School, located in Concord, was awarded a matching grant to mechanically harvest and hydrotake milfoil in Library Pond and Lower School Pond. The grant also provided for the application of lime to selected milfoil beds to determine if there was a reduction in biomass. The lime experiment was intended to supplement the work previously undertaken on Lake Winnepesaukee in 1987.
- Fifty lake surveys were performed which included intensive searches for exotic weeds.
- Several complaints were investigated relative to sightings of exotic plants.
- A matching grant was awarded to lake residents in Paugus Bay in Laconia, for the purpose of controlling milfoil with a mechanical weed harvester. Boat movement through the area was impeded by the large amounts of exotic milfoil.
- Milfoil was confirmed to be growing in Contoocook Lake in Rindge. DES biologists spent a whole day mapping the extent of the problem in Contoocook Lake. Several meetings were scheduled between lake association residents and DES biologists to determine a course of action to curtail the milfoil infestation. After discussing the problem thoroughly with all concerned, it was decided that the use of an aquatic

herbicide would be the most efficient milfoil management tool available. During the winter months, plans were drawn up, permits obtained and a weed control firm was hired to complete the plan.

## 1990

- Exotic milfoil was found in Northwood Lake during a routine inspection. Initially it was thought to be a small localized infestation. A SCUBA team revealed later that the milfoil encompassed a larger area not seen during the boat inspection. Since this was a pioneer infestation of milfoil it was decided that the best course of action to control the problem would be through the use of the herbicide called Diquat. The entire lake was surveyed for the presence of milfoil towards the end of the summer. The survey revealed that the initial infestation had spread to about 75 acres of the lake shore. Invitation for bids to control this problem were sent out and the necessary permits were obtained with a target date set for the spring of 1991 for the application of the chemical Diquat. DES funded 100% of the project.
- Contoocook Lake in Rindge received a matching grant from DES to treat 70 acres of milfoil. Aquatic Control Technology Inc. was selected to treat the lake with liquid Diquat. Milfoil had entered the lake about three to four years earlier but was not brought to the state's attention until 1989.
- A small patch of milfoil (50'x10') was found at the Mast Landing boat launching site in Crescent Lake, Wolfeboro. To prevent boats from transporting the milfoil into nearby Wentworth Lake, DES personnel used Aqua Screen, a bottom barrier, to smother the plants. The screen effectively killed the milfoil and is still in place to prevent further plant growth.
- Fifty lake water quality surveys were completed during the summer. During the survey aquatic weeds were noted.

## 1991

- During the month of June, approximately 75 acres of exotic milfoil in Northwood Lake was treated with the herbicide called Diquat. Since the milfoil was new to the lake system, the entire cost of the weed control operation was funded by the Department of Environmental Services (DES).
- The Fish Cove Lake Association and Mt. View Marina, both located on Lake Winnepesaukee, had severe infestations of exotic milfoil that precluded the recreational and commercial value of the waters. They each received matching grants to fund the application of the herbicide Diquat. Crescent Lake in Wolfeboro, also received a grant to treat 35 acres of milfoil with Diquat.
- A "weed watcher" on Lake Winnisquam notified DES that exotic milfoil was found in the northern section of the lake. DES personnel confirmed the milfoil sighting and sent two SCUBA divers to cover the small milfoil infestation with Aqua Screen. Any "straggler" plants were hand pulled by the SCUBA divers.
- A "weed watcher" from Lees Pond in Moultonboro noticed that some stands of milfoil in

the pond were being eaten by some unknown animal. Closer inspection by DES personnel revealed that an aquatic moth was responsible for the apparent decline in the milfoil biomass. The aquatic moth was subsequently identified as Paraponyx allionealis. DES SCUBA divers observed and monitored the progress of the insect and mapped out the areas affected by the insect.

- A new sign warning lake residents that milfoil was growing in their respective lakes was designed and placed at the milfoil infested lakes, usually at the boat launching facility.
- Fifty lakes were surveyed for the presence of milfoil or other exotic weeds.
- DES personnel presented several talks on exotic weed control at lake association meetings during the summer months.
- Professional divers were hired to hand pull a new infestation of milfoil in Round Cove on Lake Winnepesaukee. This was a fifty-fifty match with the local residents. DES biologists monitored the project.

## 1992

- Round Cove located on Lake Winnepesaukee was given a matching grant to control a small encroachment of milfoil. A weed control firm was hired to apply liquid Diquat to the 5 acre cove. Mt. View Marina in Gilford was also given a grant to chemically control the obnoxious milfoil that interfered with boating activities.
- DES and the Town of Wolfeboro provided money for Brewster Academy to study the aquatic moth currently eating milfoil in Lees Pond in Moultonboro. The study examined the fundamental characteristics of the aquatic moth, such as food preferences, biomass consumption, and the life cycle. These studies were performed in Back Bay in Wolfeboro and Lees Pond. Initial tests performed in "live cages" showed that the insects will decrease milfoil if in sufficient numbers. DES personnel assisted the researchers at Brewster Academy during the summer.
- A new exotic weed Myriophyllum spicatum was discovered growing in Mountain Pond in the Town of Brookfield. Otherwise known as Eurasian milfoil, this plant can spread very quickly to other ponds. A decision was made to drain the small shallow pond in an attempt to freeze and dry out the hardy plants. The beaver dam holding back the lake was breached during the fall. The plan is to let the pond stay down for at least two years. Several trips were made to the pond to insure that local beaver were not plugging the opening in the dam. As a last resort the pond may need a spot treatment of herbicides to insure that it does not spread to other nearby waterbodies.
- Exotic milfoil was found growing in Lake Winnisquam in the Towns of Tilton and Belmont. The combined total affected area was 7.81 acres. Since this was a new infestation of exotic weeds, the state was mandated to fund 100% of the weed control process. The decision was made to treat the two small areas with the herbicide 2,4-D. A request for bids to treat the two areas was sent out during the fall of 1992. A contractor was hired to obtain all the necessary permit from the Division of Pesticide Control and to apply the granular 2,4-D to the sites in Lake Winnisquam. Unfortunately, the project ran into difficulties over the issue of a nearby business using the lake as a drinking water source. The treatment area was too close to the drinking water source. The project was

- denied by the Division of Pesticide Control.
- The Wentworth Lake association applied for a matching grant from the state to chemically treat thirty five acres of milfoil in nearby Crescent Lake, Wolfeboro. This project also was denied due to a drinking water issue and the use of the aquatic herbicide 2,4-D.
- As in previous years, educational material was distributed to the public, exotic weed signs were placed at boat launching sites and talks relating to the exotic weed problem were given by DES personnel. Also, many weed specimens were submitted to DES for identification. Fifty weed surveys were performed on selected lakes in conjunction with a survey of the current water quality status of each waterbody.

### 1993

- The following were awarded matching grants from the state for the purpose of controlling exotic milfoil:
  - a. Mt. View Marina - Gilford; herbicide; 2,4-D
  - b. Lake Shore Park - Gilford; herbicide; 2,4-D
  - c. West Alton Marina - Alton; herbicide; 2,4-D
  - d. Contoocook Lake Association - Rindge/Jaffrey; herbicide; Diquat

Each site was severely infested with exotic milfoil to the point that recreational and commercial activities were impaired.

- "Weed Watchers" found three more lakes that harbored suspected stands of milfoil. Lower Suncook Lake, Lake Wentworth and Broad Bay were the latest victims of the milfoil encroachment. DES personnel covered the small stand of milfoil in Lake Wentworth with a benthic bottom barrier. The barrier physically constrains the weeds and ultimately smothers the plants within a month. Suncook Lake in Barnstead had scattered stands of milfoil near the outlet section of the lake. DES SCUBA divers placed bottom barriers on the milfoil. Each of the 5 stands of milfoil took about 300 square feet of bottom barrier. Any separately growing plants were hand pulled by the divers. During the fall drawdown of Lower Suncook Lake DES personnel patrolled the affected area searching for new milfoil growths missed during the summer. Any patches larger than 25 square feet were covered with barrier while "straggler" plants were individually hand pulled. The milfoil in Broad Bay (Bay Marina) seems to be confined to an area not larger than two acres. Local residents concerned about the problem are hand raking and pulling the milfoil plants. This area will be looked at more extensively next spring in order to decide what type of management approach will be undertaken to control the problem.
- In 1991 Northwood Lake was chemically treated to control exotic milfoil. The plants came back during the summer of 1992 and 1993. After a meeting with the lake association and DES personnel, it was decided to draw down the water in Northwood below the normal winter drawdown level. It is hoped that a cold winter will kill the newly exposed plant life.

- Officials from the Lake Wentworth Lake Association found milfoil growing in a small cove near Albee Beach in Wolfeboro. They notified DES officials of its presence and location on the lake. The plants did not have all the necessary taxonomic features needed to correctly identify the milfoil to species. However, since the milfoil was suspected to be an exotic species, it was decided that something should be done to ensure that it does not spread to the rest of the lake. DES personnel decided to cover the small area with bottom barrier. Approximately 1500 square feet of bottom barrier (Aqua Screen) were installed over the milfoil plants.
- Each year a Volunteer Lake Monitoring Workshop is held at DES headquarters in Concord. This year an aquatic weed workshop was given as well as an overview of the exotic weed program. These two programs were well attended by lake volunteers.
- Lake association members from New York state concerned about the current milfoil spread in their state asked a representative of DES to give a talk on the New Hampshire exotic weed program. They are trying to get a similar program started in New York.
- A representative from DES gave a major exotic weed presentation at the annual "Bass Master" state chapter meeting held in Concord. Major emphasis was given to cleaning weeds from boats during the "Bass Master" competitions held at many lakes during the summer months.
- An exotic weed control talk was given at the annual "Lakes Congress" held at St. Paul's School in Concord. About one hundred representatives from the many lakes of New Hampshire attended the conference.
- A grant was given to Brewster Academy in Wolfeboro to do follow up studies on the insects that eat milfoil. DES personnel assisted on this project by supplying a dive team to perform some of the experiments. Local lake association people also got involved on this project.
- Approximately 300 weed watcher kits were given out to various lake associations throughout the state. Requests for the "kits" were received from other states.
- DES personnel periodically checked on the status of the Mountain Pond drawdown in Brookfield. Occasionally, beaver would attempt to plug up the breach in the dam. The mini drought experienced this summer took its toll on the exposed Eurasian milfoil plants. Once the plants dried up, land plants took their place.
- NH Fish & Game became the lead agency for the "Statewide Public Access Program." They have agreed to place DES exotic weed warning signs at all their new and existing public access points.
- Currently, a new exotic weed sign is being developed for distribution during the summer of 1994.
- Several routine exotic weed complaints were field investigated by DES personnel. Many suspect weeds were sent to the DES Limnology Center for identification.
- Fifty lake surveys to determine current water quality status were performed by DES biologists during the summer. A weed survey was undertaken during the survey. A search for exotic weed species was also performed on each lake or pond.
- Problems associated with milfoil and other exotic plants in NH generated several newspaper articles during the summer. This "free publicity" helped get the word out to the public informing them to be careful not to spread exotic weeds to other lakes and



ponds through boating activities.

- A weed watcher from the northern section of Lake Winnisquam notified DES biologists that a small patch of milfoil had appeared in one of the coves. SCUBA divers successfully hand-pulled the plants before they spread to other sections of the lake.

## 1994

- Pioneer infestations of exotic milfoil were found in Lake Waukewan, Meredith; Cheshire Pond, Jaffrey; Broad Bay, Freedom; and Silver Lake in Tilton.

**Lake Waukewan, Meredith** -DES biologists found approximately 1.5 acres of the exotic milfoil in the outlet/canal section of Lake Waukewan during a routine water quality inspection. This same general area had milfoil in 1981 and was successfully treated and controlled with a chemical herbicide in 1982.

**Cheshire Pond, Jaffrey** -A resident on Cheshire Pond in Jaffrey reported sighting milfoil in a beach area. A DES biologist confirmed the milfoil to be exotic. The milfoil probably floated downstream from nearby Contoocook Lake ultimately taking hold in the pond. A temporary drawdown of the pond was initiated during the month of December in an attempt to freeze the milfoil plants.

**Silver Lake, Tilton** - Exotic milfoil was found in Silver Lake in Tilton by the University of New

Hampshire lay monitoring officials. DES responded to the problem quickly by hand pulling the plants and digging up the remaining plants during a fall drawdown of the lake. This site will be inspected in the spring of 1995 for signs of regrowth.

**Broad Bay, Freedom** -DES biologists had trouble identifying the milfoil at this site in 1993 because the plant did not exhibit flowers which are critical to a positive identification. However, in 1994 flowers did appear and the plant was identified as exotic milfoil. This site will be chemically treated in 1995.

- Three matching grants were awarded to lake associations in 1994 for the purpose of exotic weed control. They were as follows:

| <u>Association</u>     | <u>Lake</u>   | <u>Town</u> | Type<br><u>Exotic</u> | Control<br><u>Method</u> |
|------------------------|---------------|-------------|-----------------------|--------------------------|
| a. Locke Lake Assoc.   | Locke Lake    | Barnstead   | milfoil               | chemical                 |
| b. Meredith Yacht Club | Winnepesaukee | Meredith    | milfoil               | chemical                 |
| c. St. Pauls School    | Turkey Ponds  | Concord     | milfoil               | mechanical<br>harvesting |

- DES biologists performed several underwater exotic weed surveys with the aid of SCUBA equipment. These surveys were done to get an accurate assessment of the milfoil infestations.

- A new sign designed to educate boaters was made and placed at many boat launches throughout the state.
- Northwood Lake in Northwood was lowered in November so that the state could replace the old dam. The lake was drawn down all winter and did slow down the milfoil growth along the shoreline.
- Several informational talks were presented at lake association meetings by DES biologists. A radio talk show on exotic weeds was aired in Lebanon, while a local TV station did a major news segment on the exotic weed control program.
- DES personnel went to a meeting in Vermont to discuss new methods of controlling exotic weeds.
- Several hundred “weed watcher kits” were requested by the public. This volunteer program has been very successful over the past few years.
- Several suspected exotic weed sightings by weed watchers or other concerned lake residents were investigated by DES biologists. Many samples were sent to the Limnology Lab for identification.
- Fifty more exotic weed surveys were performed during the summer. These surveys supplement the weed watcher efforts performed by volunteers.
- Five milfoil contracts were put out to bid in 1994. These weed control projects will occur during the spring of 1995.
- Mountain Pond in Brookfield, which originally had Eurasian milfoil is still empty. There is no sign of any milfoil in the small stream that flows through the empty pond.

#### **1995**

- The outlet section of Lake Waukegan in Meredith was treated with the herbicide called Aqua Kleen. Aquatic Control Technology, Inc. of Northborough was hired by DES to undertake the project. If the milfoil had not been controlled there was a good chance it may have spread through the rest of the lake. It would have been impossible to treat the main lake since the Town of Meredith uses the lake for drinking water. An inspection of the treatment area with SCUBA gear did not reveal any milfoil plants. The treatment was a success.
- Lower Suncook Lake in Barnstead had six acres of milfoil treated with the herbicide called Reward. Lycott Environmental Research, Inc. of Southbridge Massachusetts was hired by DES to perform the treatment.
- Crescent Lake in Wolfeboro was also treated with the herbicide called Reward. An inspection of the treated area in the fall revealed no milfoil. To date treatment efforts have kept milfoil from invading the main section of nearby Lake Wentworth.
- Mountain Pond in Brookfield is still drained. Still no signs of Eurasian milfoil.
- Eurasian milfoil was found growing in the Connecticut River in Charlestown. A large boat launching facility on the Vermont side of the river is used by fishermen from both states. Vermont officials were notified of the milfoil. They posted warning signs near the launch site. Leaflets informing the public about the milfoil were handed out to the boating public at a toll booth as they crossed from New Hampshire into Vermont.
- A “weed watchers wheel” was developed to distribute to the public to aid them in their search for exotic weeds. The wheel accompanied the standard “weed watcher kit” used

by lake monitors.

- The proposal to treat Broad Bay in Freedom with herbicides was terminated due to time constraints and permitting problems.
- Contoocook Lake Association received a matching grant from the state to chemically treat small areas of milfoil. The herbicide called Diquat was used in this project.
- Several milfoil talks were given to lake associations during the summer.
- Benthic barriers were installed in a small cove on Wentworth Lake to control a small stand of milfoil.
- Milfoil was hand pulled in Lower Suncook Lake by SCUBA divers from DES.
- Eight proposed herbicide applications for the purpose of milfoil control were submitted to the Governor and Council for approval. The projects were as follows:
  - a. Broad Bay, Freedom
  - b. Lakeshore Park, Gilford
  - c. Mt. View Marina, Gilford
  - d. West Alton Marina, Alton
  - e. Winnisquam Lake, Belmont
  - f. Silver Lake, Belmont
  - g. Cobbetts Pond, Windham
  - h. Fish Cove, Meredith
- Exotic milfoil was found at Claire's Boat Landing on Lake Massabesic in Auburn. This lake is Manchester's water supply. Benthic barriers were placed on a large portion of the milfoil. The use of herbicides was not allowed due to the drinking water status of the lake. Manchester Water Works personnel moved the benthic barriers to other milfoil sites as needed.

## 1996

- Eight herbicide applications to control milfoil occurred during the month of June. They are as follows:
  - a. Broad Bay, Freedom
  - b. Lakeshore Park, Gilford
  - c. Mt. View Marina, Gilford
  - d. West Alton Marina, Alton
  - e. Winnisquam Lake, Belmont
  - f. Silver Lake, Belmont
  - g. Cobbetts Pond, Windham
  - h. Fish Cove, Meredith
- Two new infestations of milfoil were confirmed by the DES staff. Captain Pond in Salem and Lake Massasecum in Bradford now possess the nuisance weed.
- SCUBA divers checked Lake Waukewan for any signs of milfoil regrowth one year after it was treated. No milfoil plants were observed during the dive.
- Milfoil was discovered growing in the northern end of Lake Winnisquam.
- A milfoil education display was presented at the Fish and Game Department "Discover Wild New Hampshire Day."
- A similar display was also presented at "Celebrate Your Lakes Day" held this summer in Meredith.
- Milfoil informational talks were given throughout the summer at many lake association

meetings.

- A talk was given to the Fish and Game Department volunteer fishing instructors on how to look for exotic weeds throughout the state.
- Ken Warren attended a National Weed Control Conference held in Burlington Vermont in July. Several papers on new promising control techniques were presented.
- Benthic barriers were placed on a small infestation in Lake Winnisquam.
- Mountain Pond in Brookfield was checked for any regrowth of Eurasian milfoil. No plants were found during the inspection.

## 1997

- Six herbicide applications were performed in the spring to control nuisance growths of exotic aquatic plants:
  - a. Northwood Lake, Northwood
  - b. Lake Winnepesaukee, Mountain View Marina, Gilford
  - c. Lake Winnepesaukee, Meredith Bay, Meredith
  - d. Lake Massasecum, Bradford
  - e. Lake Winnepesaukee, Krainwood Shores, Moultonboro
  - f. Locke Lake, Barnstead
- Benthic barriers were placed in Heath Bog of Lake Wentworth, Wolfeboro, Lake Massabesic in Auburn, Lake Massasecum Bradford, as well as in small localized areas in other lakes.
- A new infestation of milfoil was documented at Claire's Boat Landing on Lake Massabesic in Auburn, and Powder Mill Pond in Hancock.
- SCUBA divers inspected several small infestations of milfoil and hand-pulled plants where they were encountered in low densities.
- Several displays were presented at summer events and festivals including "Celebrate Your Lakes Day", and "Discover Wild New Hampshire Day."
- Informative presentations were given at a number of lake association meetings throughout the summer.
- HB 181 was passed prohibiting a number of activities associated with exotic aquatic plants.

## 1998

- RSA 487:16-a went into effect on January 1, 1998. This new law prohibits the sale, distribution, importation, purchase, propagation, transportation, or introduction of 14 listed exotic aquatic plants in New Hampshire. The new statute also allows for the designation of restricted use areas on waterbodies.
- On September 5, 1998 new rules were enacted pursuant to RSA 487:16-a.

- Benthic Barriers were placed in Lake Winnepesaukee in Meredith, Lake Wentworth in Wolfeboro, Contoocook Lake in Jaffrey, Hopkinton Lake in Hopkinton, Lake Massabesic in Auburn, and Lake Massasecum in Bradford, as well as in small places in an additional 2-3 lakes.
- Maintenance hand-pulling activities took place at a number of lakes with new and existing milfoil infestations.
- The following herbicide applications were performed during the Spring:
  - a. Forest Lake, Winchester
  - b. Captains Pond, Salem
  - c. Sunrise Lake, Middleton
  - d. Contoocook Lake, Jaffrey
  - e. Lake Winnepesaukee, Gilford
  - f. Lake Winnepesaukee, Moultonboro
  - g. Lake Winnepesaukee, Tommy Cove, Meredith
- A number of summer lake festivals were attended by the Exotic Species Coordinator, including "Celebrate Your Lakes Day," "Naturally Newfound," "Discover Wild New Hampshire Days," and Keene State College "Solarfest".
- Several presentations were given to towns and lake associations throughout the state on exotic aquatic plants.
- Exotic species signs which are posted at boat launches throughout the state were revised to include the changes in legislation associated with exotic plants.
- A number of milfoil control activities were conducted this summer at Lake Massasecum in Bradford. Benthic barriers were installed, a restricted use area was established in the north cove, and a net was placed across the surface of the water (vertically in water column) to trap floating fragments of milfoil.
- 500 specimens of variable milfoil (*Myriophyllum heterophyllum*) were sent to the Army Corps of Engineers, Waterways Experimental Station in Vicksburg, MS for research on control methods. Garlon 3-A, a new herbicide that is thought to be more effective and environmentally sound than 2,4-D, was used to treat the plants. More extensive research will be conducted this spring.

## 1999

- Eurasian milfoil found in Lake Mascoma in Enfield. Numerous diving operations were conducted to hand remove the milfoil.
- 'Suspicious patches of milfoil found in Horseshoe Pond in Merrimack and in Belleau Lake, Wakefield. Plants did not flower so positive identifications were not made. Plan to investigate again in 2000.
- Nine herbicide applications were conducted this year. Most were in various portions of Lake Winnepesaukee. Other treatments were conducted at the following waterbodies:
  - Contoocook Lake, Rindge
  - Lake Monomonac, Rindge
  - Captains Pond, Salem
  - Crescent Lake, Wolfeboro
  - Lake Wentworth, Wolfeboro

- Numerous presentations were given to lake associations about exotic plants

## 2000

- New Variable milfoil infestations documented in Little Squam Lake and Squam River, Holderness/Ashland, Danforth Pond, Ossipee, and Rocky Pond, Gilmanton.
- Re-investigations of the two suspect infestations of milfoil from summer of 1999 confirmed that the species of milfoil in Belleau Lake, Wakefield, and Horseshoe Pond, Merrimack were indeed the variable milfoil.
- Herbicide applications conducted at the following locations in 2000:
  - Lake Winnepesaukee, Meredith, Gilford, Center Harbor, Moultonboro, and Alton
  - Northwood Lake, Northwood
  - Locke Lake, Barnstead
  - Lake Monomonac, Rindge
  - Contoocook Lake, Rindge
- Innovative milfoil management activities taking place on Lake Massasecum, Bradford. Lake Association, through funding from NHDES, have constructed harvester to repeatedly harvest milfoil in northern cove of lake.
- RUA installed in Little Squam Lake to contain milfoil.
- Hand-pulling conducted on milfoil in channel connecting Big and Little Squam Lakes.
- Research on milfoil impacts to property values initiated at UNH.
- RSA 487:16-b went into effect making it unlawful to knowingly, recklessly, or purposely offer for sale, distribute, sell, import, purchase, propagate, or introduce exotic aquatic weeds into New Hampshire waterbodies. The new law makes it a violation to conduct any of the above listed activities.

## 2001

- New Variable milfoil infestations documented in Lake Sunapee, Sunapee at Georges Mill, and Dublin Lake in Dublin.
- A new invasive plant was first documented in New Hampshire. *Egeria densa*, also known as Brazilian elodea, was found in Nutts Pond in Manchester.
- Herbicide applications conducted in 20 waterbodies, the most waterbodies ever treated in one summer in New Hampshire.
- Innovative milfoil management activities taking place on Lake Massasecum, Bradford. Lake Association, through funding from NHDES, have continued harvesting activities and installing bottom barriers.
- RUA installed in Little Squam Lake and Lake Sunapee to contain milfoil.
- Hand-pulling conducted on milfoil in channel connecting Big and Little Squam Lakes, Dublin Lake, and Lake Sunapee.
- Research on milfoil impacts to property values by UNH suggests a 16+% decline in lakefront property values.

## 2002

- New Variable milfoil infestations documented in Turtletown Pond in Concord, Balch Lake in Wakefield (plants found in 2001, but not in flower), Melendy Pond and Lake Potanipo in Brookline and in Brindle Pond in Barnstead.
- DES conducted 25 herbicide applications on various waterbodies throughout the state. This is the most number of treatments that have been conducted in any one year since the program began.
- Innovative harvesting activities continued on Lake Massasecum in Bradford.
- New Hampshire Lakes Association established a pilot Lake Host Program on several waterbodies.
- NHDES began working with Dartmouth College to sequence milfoil genetics and determine if hybridization is occurring.

## 2003

- RSA 487:25 was enacted on January 1, 2003, establishing the Milfoil and Other Exotic Aquatic Plant Prevention and Research Grant Program.
- First round of Milfoil and Other Exotic Aquatic Plant Prevention Grants awarded to three recipients. New Hampshire Lakes Association, Department of Safety, and Androscoggin River Watershed Council.
- Two new infestations of variable milfoil documented in Jones Pond in New Durham and in Scobie Pond/Haunted Lake in Franconia. Fanwort was also identified in Lake Massabesic, Auburn (this lake has variable milfoil as well). Barnstead Parade Dam Pond also has variable milfoil growing in it, though the Suncook River as a whole has patches of infestations, so this is not a 'new' infestation.
- Eurasian milfoil found growing again in Mountain Pond in Brookfield. It was assumed that this infestation was eradicated due to a 3-year drawdown of the pond. Five foot tall plants were found growing in August.
- 20 herbicide applications were conducted in 2003
- Dartmouth report on milfoil genetics released.
- DES and New Hampshire Lakes Association join forces to train lake hosts to monitor public access sites throughout NH
- DES studies new legislation concerning the use of grass carp for exotic plant control
- DES fund first control grant to treat Brazilian elodea in Nutts Pond, Manchester
- DES Biologists collect Hydrilla samples from Maine Lake to observe *in-situ* growth rates
- Second year of pet store and nursery inspections takes place to look for sales of prohibited exotic aquatic plants
- DES announces second round of prevention grants and first round of research grants.
- DES biologists provided the NH perspective on aquatic plant management at the NALMS National Conference in Mashantucket, CT.

## 2004

- DES mailed updates on exotic species in New Hampshire to over 200 BASS Angler

organizations, as well as other smaller fishing clubs and organizations. A list from the Department of Fish and Game for tournament participants was used to generate contacts.

- DES was awarded a \$1,000,000 grant for milfoil research projects thanks to the efforts of Senator Judd Gregg. Senator Gregg routed a request for funds in the amount of \$500,000 through both the National Atmospheric and Oceanic Association (NOAA) and through the Environmental Protection Agency (EPA). Both were approved for funding.
- A Quest Program was developed by Maine Public Television and was broadcast in New Hampshire, Maine, and Vermont showcasing the efforts of the different state agencies as they deal with the issue of invasive species. New Hampshire's Exotic Species Program was involved in the interview and filming.
- Updated DES Exotic Species Website to include a quiz in game show style on 'Who Wants to be an Exotic Species Expert', and added a coloring page to educate children on invasive species.
- Granted funds for three prevention grants (New Hampshire Lakes Association, Department of Safety, and Ossipee Lake Association) and two research grants (University of New Hampshire/Suncook Lake Association and Plymouth State University).
- Adopted fine schedule for activities associated with prohibited exotic aquatic plants.
- Mailed announcement to 125+ pet stores in New Hampshire about new fine schedule for selling, importing, purchasing, propagating, and possessing prohibited exotic aquatic plants in New Hampshire.